

untitled-3

February 27, 2025

```
[22]: import pandas as pd
```

```
[23]: df=pd.read_csv(r"C:\Users\advik\OneDrive\Desktop\Experiment3.csv")
```

```
[24]: df[(df["Experience_Years"] > 5) & (df["Department"] == "IT")]
```

```
[24]:
```

	Employee_ID	Name	Age	Department	Role	Experience_Years	\
6	1007	Employee_7	32	IT	Intern	13.0	
10	1011	Employee_11	45	IT	Executive	9.0	
28	1029	Employee_29	58	IT	Lead	7.0	
38	1039	Employee_39	23	IT	Intern	16.0	
55	1056	Employee_56	31	IT	Manager	14.0	
62	1063	Employee_63	44	IT	Manager	9.0	
73	1074	Employee_74	28	IT	Intern	15.0	
74	1075	Employee_75	30	IT	Manager	7.0	
83	1084	Employee_84	56	IT	Intern	18.0	
90	1091	Employee_91	33	IT	Lead	19.0	

	City	Salary	Monthly_Sales
6	Los Angeles	NaN	39
10	Houston	124076.0	68
28	Los Angeles	122873.0	55
38	Houston	102856.0	36
55	Houston	77080.0	52
62	New York	112124.0	78
73	Houston	126769.0	22
74	Chicago	49435.0	72
83	New York	92224.0	20
90	Houston	139835.0	51

```
[25]: df[(df["Monthly_Sales"] >=50) & (df["Monthly_Sales"] <= 80)]
```

```
[25]:
```

	Employee_ID	Name	Age	Department	Role	Experience_Years	\
0	1001	Employee_1	50	Sales	Analyst	NaN	
4	1005	Employee_5	40	Sales	Analyst	2.0	
7	1008	Employee_8	32	HR	Intern	17.0	
9	1010	Employee_10	57	IT	Manager	1.0	

10	1011	Employee_11	45	IT	Executive	9.0
13	1014	Employee_14	23	HR	Intern	7.0
15	1016	Employee_16	51	Finance	Manager	NaN
18	1019	Employee_19	42	Marketing	Analyst	6.0
28	1029	Employee_29	58	IT	Lead	7.0
30	1031	Employee_31	42	Sales	Analyst	15.0
31	1032	Employee_32	30	Marketing	Manager	13.0
32	1033	Employee_33	39	Finance	Manager	11.0
34	1035	Employee_35	46	Finance	Analyst	14.0
40	1041	Employee_41	49	Sales	Manager	9.0
44	1045	Employee_45	35	HR	Manager	4.0
45	1046	Employee_46	38	Sales	Analyst	0.0
48	1049	Employee_49	23	Sales	Executive	11.0
52	1053	Employee_53	39	Marketing	Lead	5.0
55	1056	Employee_56	31	IT	Manager	14.0
58	1059	Employee_59	52	Sales	Lead	19.0
62	1063	Employee_63	44	IT	Manager	9.0
64	1065	Employee_65	37	Finance	Analyst	16.0
66	1067	Employee_67	45	HR	Lead	4.0
69	1070	Employee_70	50	Sales	Analyst	0.0
74	1075	Employee_75	30	IT	Manager	7.0
76	1077	Employee_77	22	Marketing	Intern	0.0
77	1078	Employee_78	29	Sales	Lead	15.0
84	1085	Employee_85	54	Finance	Intern	4.0
85	1086	Employee_86	26	HR	Lead	NaN
90	1091	Employee_91	33	IT	Lead	19.0
91	1092	Employee_92	55	HR	Lead	NaN
93	1094	Employee_94	44	Sales	Lead	NaN
95	1096	Employee_96	58	HR	Intern	6.0
96	1097	Employee_97	56	Marketing	Manager	NaN
98	1099	Employee_99	48	Finance	Lead	4.0

	City	Salary	Monthly_Sales
0	Houston	142795.0	66
4	San Francisco	127508.0	55
7	San Francisco	106703.0	76
9	Houston	41062.0	66
10	Houston	124076.0	68
13	New York	61689.0	50
15	Los Angeles	128461.0	73
18	San Francisco	63714.0	76
28	Los Angeles	122873.0	55
30	New York	112592.0	77
31	San Francisco	117052.0	79
32	Los Angeles	NaN	69
34	Houston	NaN	60
40	San Francisco	128858.0	52

44	Houston	94693.0	65
45	San Francisco	NaN	54
48	San Francisco	82348.0	66
52	San Francisco	131792.0	75
55	Houston	77080.0	52
58	Chicago	NaN	68
62	New York	112124.0	78
64	San Francisco	66790.0	68
66	New York	95129.0	52
69	Los Angeles	55485.0	74
74	Chicago	49435.0	72
76	Houston	70355.0	72
77	New York	95771.0	56
84	Houston	79298.0	70
85	Los Angeles	148492.0	64
90	Houston	139835.0	51
91	New York	68016.0	53
93	Chicago	73591.0	58
95	Chicago	143333.0	53
96	Chicago	107641.0	73
98	San Francisco	62700.0	69

```
[26]: df.sort_values (by="Age")
```

```
[26]:
```

	Employee_ID	Name	Age	Department	Role	Experience_Years	\
76	1077	Employee_77	22	Marketing	Intern	0.0	
71	1072	Employee_72	22	HR	Lead	14.0	
13	1014	Employee_14	23	HR	Intern	7.0	
17	1018	Employee_18	23	Finance	Executive	15.0	
48	1049	Employee_49	23	Sales	Executive	11.0	
..	
46	1047	Employee_47	57	Finance	Manager	7.0	
56	1057	Employee_57	57	Finance	Intern	2.0	
28	1029	Employee_29	58	IT	Lead	7.0	
95	1096	Employee_96	58	HR	Intern	6.0	
16	1017	Employee_17	59	Marketing	Executive	10.0	

	City	Salary	Monthly_Sales
76	Houston	70355.0	72
71	San Francisco	126188.0	88
13	New York	61689.0	50
17	Chicago	49348.0	35
48	San Francisco	82348.0	66
..
46	San Francisco	68295.0	25
56	Los Angeles	41324.0	84
28	Los Angeles	122873.0	55

```

95      Chicago  143333.0      53
16      Chicago  143033.0      22

```

[100 rows x 9 columns]

```
[27]: df.sort_values(by="Age",ascending=False)
```

```
[27]:
```

	Employee_ID	Name	Age	Department	Role	Experience_Years	\
16	1017	Employee_17	59	Marketing	Executive	10.0	
28	1029	Employee_29	58	IT	Lead	7.0	
95	1096	Employee_96	58	HR	Intern	6.0	
9	1010	Employee_10	57	IT	Manager	1.0	
46	1047	Employee_47	57	Finance	Manager	7.0	
..	
17	1018	Employee_18	23	Finance	Executive	15.0	
38	1039	Employee_39	23	IT	Intern	16.0	
48	1049	Employee_49	23	Sales	Executive	11.0	
76	1077	Employee_77	22	Marketing	Intern	0.0	
71	1072	Employee_72	22	HR	Lead	14.0	

	City	Salary	Monthly_Sales
16	Chicago	143033.0	22
28	Los Angeles	122873.0	55
95	Chicago	143333.0	53
9	Houston	41062.0	66
46	San Francisco	68295.0	25
..
17	Chicago	49348.0	35
38	Houston	102856.0	36
48	San Francisco	82348.0	66
76	Houston	70355.0	72
71	San Francisco	126188.0	88

[100 rows x 9 columns]

```
[30]: df.sort_values(by=["Department","Experience_Years"],ascending=[True,False])
```

```
[30]:
```

	Employee_ID	Name	Age	Department	Role	Experience_Years	\
39	1040	Employee_40	41	Finance	Analyst	19.0	
33	1034	Employee_34	25	Finance	Analyst	18.0	
63	1064	Employee_64	42	Finance	Intern	18.0	
64	1065	Employee_65	37	Finance	Analyst	16.0	
17	1018	Employee_18	23	Finance	Executive	15.0	
..	
70	1071	Employee_71	36	Sales	Executive	0.0	
0	1001	Employee_1	50	Sales	Analyst	NaN	
42	1043	Employee_43	29	Sales	Intern	NaN	

61	1062	Employee_62	35	Sales	Manager	NaN
93	1094	Employee_94	44	Sales	Lead	NaN

	City	Salary	Monthly_Sales
39	Los Angeles	133105.0	92
33	Chicago	41542.0	47
63	Chicago	143605.0	46
64	San Francisco	66790.0	68
17	Chicago	49348.0	35
..
70	Chicago	84482.0	25
0	Houston	142795.0	66
42	New York	123460.0	48
61	Houston	74578.0	82
93	Chicago	73591.0	58

[100 rows x 9 columns]

```
[31]: df.groupby("Department")["Salary"].mean()
```

```
[31]: Department
Finance      90330.000000
HR           101259.894737
IT            90978.307692
Marketing    107269.125000
Sales        93633.043478
Name: Salary, dtype: float64
```

```
[32]: df[df["Age"]>30]
```

```
[32]:
```

	Employee_ID	Name	Age	Department	Role	Experience_Years	\
0	1001	Employee_1	50	Sales	Analyst	NaN	
1	1002	Employee_2	36	HR	Intern	2.0	
3	1004	Employee_4	42	HR	Executive	9.0	
4	1005	Employee_5	40	Sales	Analyst	2.0	
5	1006	Employee_6	44	Marketing	Analyst	7.0	
..	
95	1096	Employee_96	58	HR	Intern	6.0	
96	1097	Employee_97	56	Marketing	Manager	NaN	
97	1098	Employee_98	43	HR	Intern	0.0	
98	1099	Employee_99	48	Finance	Lead	4.0	
99	1100	Employee_100	56	Finance	Lead	9.0	

	City	Salary	Monthly_Sales
0	Houston	142795.0	66
1	Chicago	129112.0	40
3	Chicago	51130.0	94

4	San Francisco	127508.0	55
5	San Francisco	145955.0	38
..
95	Chicago	143333.0	53
96	Chicago	107641.0	73
97	Los Angeles	76395.0	22
98	San Francisco	62700.0	69
99	Houston	74620.0	31

[73 rows x 9 columns]

```
[33]: df[df["Department"]=="Sales"]
```

```
[33]:
```

	Employee_ID	Name	Age	Department	Role	Experience_Years	\
0	1001	Employee_1	50	Sales	Analyst	NaN	
4	1005	Employee_5	40	Sales	Analyst	2.0	
8	1009	Employee_9	45	Sales	Manager	14.0	
14	1015	Employee_15	45	Sales	Manager	0.0	
30	1031	Employee_31	42	Sales	Analyst	15.0	
40	1041	Employee_41	49	Sales	Manager	9.0	
41	1042	Employee_42	28	Sales	Intern	5.0	
42	1043	Employee_43	29	Sales	Intern	NaN	
43	1044	Employee_44	56	Sales	Analyst	10.0	
45	1046	Employee_46	38	Sales	Analyst	0.0	
48	1049	Employee_49	23	Sales	Executive	11.0	
51	1052	Employee_52	50	Sales	Analyst	3.0	
53	1054	Employee_54	47	Sales	Manager	12.0	
58	1059	Employee_59	52	Sales	Lead	19.0	
60	1061	Employee_61	29	Sales	Analyst	12.0	
61	1062	Employee_62	35	Sales	Manager	NaN	
67	1068	Employee_68	47	Sales	Analyst	8.0	
69	1070	Employee_70	50	Sales	Analyst	0.0	
70	1071	Employee_71	36	Sales	Executive	0.0	
72	1073	Employee_73	46	Sales	Manager	1.0	
77	1078	Employee_78	29	Sales	Lead	15.0	
78	1079	Employee_79	45	Sales	Analyst	6.0	
87	1088	Employee_88	28	Sales	Analyst	14.0	
92	1093	Employee_93	54	Sales	Manager	11.0	
93	1094	Employee_94	44	Sales	Lead	NaN	

	City	Salary	Monthly_Sales
0	Houston	142795.0	66
4	San Francisco	127508.0	55
8	New York	67192.0	37
14	Chicago	51174.0	20
30	New York	112592.0	77
40	San Francisco	128858.0	52

41	Los Angeles	59065.0	96
42	New York	123460.0	48
43	San Francisco	128092.0	32
45	San Francisco	NaN	54
48	San Francisco	82348.0	66
51	Chicago	146995.0	29
53	Houston	97854.0	49
58	Chicago	NaN	68
60	Houston	59870.0	45
61	Houston	74578.0	82
67	Los Angeles	133714.0	20
69	Los Angeles	55485.0	74
70	Chicago	84482.0	25
72	New York	44748.0	24
77	New York	95771.0	56
78	Los Angeles	97799.0	93
87	New York	101629.0	23
92	Los Angeles	63960.0	91
93	Chicago	73591.0	58

[]: